

WHAT IS CLAIMED IS:

1. A method of operating a computing device wherein said device is adapted to perform a supervisory and/or supporting role in relation to peers in a peer-to-peer network, the method including the steps of:

- a. the computing device establishing contact with a plurality of peers which are to be the subject of the supervision and/or support role; and
- b. providing said supervision and/or support.

2. A method of operating a peer-to-peer network, wherein the network includes one or more super-peers adapted to perform a supervisory and/or supporting role, the method including the steps of:

- a. at least one super-peer receiving notification that said role is requested;
- b. the at least one super-peer establishing contact with a plurality of peers which are to be the subject of the supervision and/or support role; and
- c. providing said supervision and/or support.

3. The method as claimed in claim 2 wherein any of steps a) to c) are assigned to and performed by a different super-peer than that which is the subject of the original request.

4. The method according to claim 2, wherein the role is to hold data for the benefit of one or more other peers, where the holding role includes the steps of:

- a. the super-peer receiving the data;
- b. recording the received data;
- c. receiving requests for the data from users of the network or a process running on the network;
- d. retrieving data based on the request; and
- e. transmitting the result to the requesting user or process

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5. The method according to claim 4, wherein the step of receiving the data includes the step of:

processing the received data based on other data which was previously recorded or is received with the received data.

6. The method according to claim 4, wherein the step of receiving the data includes the step of:

where specified by the role, performing predetermined operations, including operations that affect the received data and/or that affect other data previously recorded, and/or that result in one or more transmissions to one or more other peers.

7. The method according to claim 4, wherein the step of receiving the request includes the step of:

where specified by the role, performing predetermined operations, including operations that affect the request and/or that affect data previously recorded, and/or that result in one or more transmissions to one or more other peers

8. The method according to claim 2, wherein the role is to assign one or more operations to one or more other peers, where the assignment role includes the steps of:

- a. the super-peer deciding that a peer is required to perform an operation;
- b. selecting a peer from a list of available peers;
- c. retrieving details of the selected peer; and
- d. instructing the selected peer to perform the operation.

9. The method according to claim 6, including the further steps of:

- a. assessing the peers in the list of available peers; and

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- b. recording the assessment.

10. The method according to claim 2, wherein the role is to share the performance of an operation with one or more other peers and wherein the sharing role includes the steps of:

- a. the super-peer receiving notification that a peering relationship is required, a peering relationship being a method of operating with one or more other peers so as to share the performance of an operation;
- b. determining the identity of one or more siblings required to implement the peering relationship, siblings being the other peers who share in the performance of the operation;
- c. establishing the peering relationship with the one or more siblings;
- d. maintaining synchronisation between the super-peer and the siblings ;
- e. securing replacement siblings as required; and
- f. creating new siblings as required.

11. The method according to claim 10, wherein the synchronisation step includes the steps of:

- a. handling a request related to the operation if it does not affect the state of the operation around which the peering relationship is established;
- b. transmitting the request to a sibling, if the super-peer is unable to handle the request; and
- c. transmitting the request to all siblings, if the request does affect the state of the operation around which the peering relationship is established.

12. The method according to claim 10, wherein the synchronisation step includes the steps of:

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a. confirming that all siblings have received the same request, before handling a request related to the operation that relates to the operation around which the peering relationship is established; and

b. handling the request independently, if there is confirmation.

13. The method according to claim 10, wherein:

a. one or more siblings incorporate functionality which includes that related to receiving data; and

b. siblings not receiving data incorporate functionality which includes that related to processing and/or recording the data.

14. The method according to claim 2, wherein the role is to provide to users not able to access the network with an interface to the network, where the interfacing role includes the steps of:

a. the super-peer receiving instructions from a user who is unable to access the network, wherein the instructions are received independently of the network;

b. executing the instructions;

c. obtaining the results of the execution; and

d. transmitting the results to the user, wherein the results are transmitted independently of the network.

15. The method according to claim 14, including the further steps of:

a. retrieving user specific data; and

b. modifying the instructions based on the user specific data.

16. A method of operating a computing device, the device adapted to support the interaction of a plurality of other computing devices who are otherwise communicating with each other directly over a network, the method including the steps of:

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- a. the computing device establishing contact with a plurality of computing devices which are to be the supported; and
- b. providing said support.

17. A system for operating a computing device, the device adapted to perform a supervisory and/or supporting role for peers in a peer-to-peer network, the system including :

1) a data storage means storing data related to the role and its implementation; and

2) a data processing system coupled to said data storage means and adapted to:

- a. in accordance with the role, establish contact with a plurality of peers which are to be the subject of the supervision and/or support role; and
- b. provide said supervision and/or support.

18. The system according to claim 17, wherein the role is to hold data for the benefit of one or more other peers, the system including :

a data processing system adapted to:

- a. receive the data;
- b. record the received data;
- c. receive requests for the data from users of the network or a process running on the network;
- d. retrieve data based on the request; and
- e. transmit the result to the requesting user or process

19. The system according to claim 18, wherein the data processing system is further adapted to:

process the received data based on other data which was previously recorded or is received with the received data.

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20. The system according to claim 19, wherein the data processing system is further adapted to:

where specified by the role, perform predetermined operations, including operations that affect the received data, and/or that affect the request, and/or that affect other data previously recorded, and/or that result in one or more transmissions to one or more other peers.

21. The system according to claim 18, wherein the role is to assign one or more operations to one or more other peers, the system including :

a data processing system adapted to:

- a. decide whether or not a peer is required to perform an operation;
- b. select a peer from a list of available peers;
- c. retrieve details of the selected peer; and
- d. instruct the selected peer to perform the operation.

22. The system according to claim 21, wherein the data processing system is further adapted to:

- a. assess the peers in the list of available peers; and
- b. record the assessment.

23. The system according to claim 18, wherein the role is to share the performance of an operation with one or more other peers, the system including :

a data processing system adapted to:

- a. receive notification that a peering relationship is required, a peering relationship being a method of operating with one or more other peers so as to share the performance of an operation;
- b. determine the identity of one or more siblings for the peering relationship, siblings being the other peers who share the performance of an operation;

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- c. establish the peering relationship with the siblings;
- d. ensure that the super-peer and the siblings remain synchronised;
- e. secure replacement siblings as required; and
- f. create new siblings as required.

24. The system according to claim 23, wherein the data processing system remains synchronised by:

- a. handling a request if it does not affect the state of the operation around which the peering relationship is established;
- b. transmitting the request to a sibling, if the super-peer is unable to handle the request; and
- c. transmitting the request to all siblings, if the request does affect the state of the operation around which the peering relationship is established.

25. The system according to claim 24, wherein the data processing system is further synchronised by:

- a. confirming that all siblings have received the same request before handling a request that relates to the operation around which the peering relationship is established; and
- b. handling the request independently, if there is confirmation.

26. The system according to claim 18, wherein the role is to provide to users not able to directly access the network an interface to the network, wherein the data processing system is further adapted to:

- a. receive instructions from a user who is unable to access the network, wherein the instructions are received independently of the network;
- b. execute the instructions;
- c. obtain the results of the execution; and
- d. transmit the results to the user, wherein the results are transmitted independently of the network.

27. The system according to claim 26, wherein the data processing system is further adapted to:

- a. retrieve user specific data; and
- b. modify the instructions based on the user specific data.

28. The system according to claim 27, wherein the data processing system is further adapted to:

- a. retrieve user specific data; and
- b. modify the results based on the user specific data.

29. A system for operating a computing device, the device adapted to support the interaction of a plurality of other computing devices, who are otherwise communicating with each other directly over a network, the system including :

a data storage means for storing data related to the role and its implementation ; and a data processing system coupled to said data storage means and adapted to:

- a. establish contact with a plurality of computing devices which are to be the supported; and
- b. provide said support.

30. A method as claimed in claim 4 wherein the role corresponds to the super-peer being a witness to a transaction.

31. A method as claimed in claim 10 wherein the role corresponds to the super-peer performing joint or jury-peering in relation to a transaction.

32. A method as claimed in claim 14 wherein the peers perform cooperative peering thereby allowing a jury function to be performed by the one or more peers in relation to a transaction.



33. A method as claimed in any of claims 30 to 32 wherein the transaction corresponds to a sale, swap, auction, bid, exchange, distribution of information or other transaction which is amenable to supervision, authorisation or validation, distribution or the like.

34. A method as claimed in claim 4 wherein the stored data corresponds to links to other peers.

35. A method as claimed in claim 34 wherein the links constitute a neural network having statistical attributes which indicate characteristics of the link such as usability, popularity or the like.

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